ACC.15
TCT@ACC-i2 | innovation in intervention

A1140
JACC March 17, 2015
Volume 65, Issue 10S

Non Invasive Imaging (Echocardiography, Nuclear, PET, MR and CT)

ROLE OF BRAIN NATRIURETIC PEPTIDE IN SCREENING FOR CARDIAC AMYLOIDOSIS IN MULTIPLE MYELOMA PATIENTS UNDERGOING CARDIAC MAGNETIC RESONANCE IMAGING

Poster Contributions
Poster Hall B1
Saturday, March 14, 2015, 3:45 p.m.-4:30 p.m.

Session Title: CMR in Cardiomyopathy
Abstract Category: 18. Non Invasive Imaging: MR
Presentation Number: 1134-005

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Background: Patients with multiple myeloma have a high incidence of AL amyloidosis. Traditional screening modalities including EKG and echocardiography have limited value. The aim of this study was to evaluate the role of Brain Natriuretic Peptide (BNP) level in screening for cardiac amyloidosis and to evaluate the cardiac MRI features associated with elevated BNP in a large multiple myeloma population at a large specialized referral center.

Methods: 209 consecutive patients with multiple myeloma who had a baseline BNP level and underwent cardiac MRI between 6/2005 and 10/2011 were enrolled in this study. Primary endpoint was all cause death. Clinical, EKG, echocardiographic, biomarker and MRI predictors for death were analyzed.

Results: Mean age of population was 61+/-10 years, 30% of the population had MRI evidence of cardiac involvement. Patients with normal BNP (<100pg/ml) have lower wall thickness, lower LV diastolic volumes and left atrial size. 7.1% of patients with a BNP less than 100 had MR delayed enhancement pattern suggestive of cardiac amyloidosis of whom two patients had a LV wall thickness less than 1.2 cm.

Conclusion: Though a BNP<100pg/mL is associated with less structural abnormalities by cardiac MRI and confers a better prognosis in patients with multiple myeloma, a normal BNP level does not rule out cardiac amyloidosis.

	Normal BNP(<100pg/mL)n=70	Elevated BNP(>100pg/mL)n=139	P value
Age	61+/-10	63.4+/-9.7	0.9
Mean BNP	45.3+/-25	895+/-1230	
LV ejection fraction by MR	61.2+/-11.2	57.9+/-15.7	0.1
LV end diastolic volume by MR	81.6+/-36.2	94.3+/-46.1	0.04
LA diameter by MR	3.2+/-0.6	3.6+/-0.7	0.001
LV thickness by MR	0.98+/-0.2	1.15+/-0.3	0.0001
MR enhancement suggestive of cardiac amylodosis	5(7.1%)	44(31.7%)	0.0001
Mortality	13(18.6%)	60(43.2%)	0.0001